

EKR 6.1

Controller of electrical heating



Title	Article No.
EKR 6.1	102945

EKR6.1 is a proportional controller of electrical heating with automatic adaptation of voltage. An internal or an external sensor is used with the device. EKR6.1 controls the heating intensity by switching electrical power on or off. The ratio between the off-time and on-time depends on the need for heating and can vary in the range between 0% and 100%. EKR6.1 is suitable for the control of electrical heating only. Its principle of operation preclude its being used for the control of motors or lighting systems. EKR6.1 is not suitable for the control of three-phase electrical current, it is used to control monophasic and biphasic heaters only.

ACCESSORIES

OMH-G



Technical data

Max. controlled load [kW]	6,4/400V, 3,2/230V
Max. controlled current [A]	16
Voltage [V]	230-415
Frequency [Hz]	50-60
Phases	1~230V, 2~400V
Dimensions (WxHxL) [mm]	150 x 80 x 55
Protection class	IP20
Ambient temperature [°C]	30 max.
Ambient humidity	90% RH max.

Controllers conform to requirements of standards LST EN 61010-1:2002, LST EN 55022:2000, LST EN 60730-1+A11: 2002/A16 2007 and carry the CE mark.

Control principle

EKR6.1 controls the full load On-Off. EKR6.1 adjusts the mean power output to the prevailing power demand by proportionally adjusting the ratio between On-time and Off-time.

EKR6.1 has zero phase-angle detection for preventing RFI (radio frequency interference).

EKR6.1 automatically adjusts its control mode to suit the controlled object's dynamics.

For rapid temperature changes i.e. supply air control EKR6.1 will act as a PID controller.

For slow temperature changes i.e. room control EKR6.1 will act as a PID controller.

Night temperature set-back

Potential-free closure will give a night set-back of 1 - 10°C. Settable with a potentiometer which is in the EKR6.1.

EKR 15.1 / EKR 15.1 P

Controller of electrical heating



Title	Article No.
EKR 15.1	106330

EKR15.1 is a proportional controller for electric heaters with automatic voltage adaptation. EKR15.1 controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.

EKR15.1 is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control.

EKR15.1 can control 15kW heater and has relay output for extra load control with contactor, on which can be connected load up to 12kW. Full load can be 27kW.

Control principle

EKR15.1 has zero phase-angle detection to prevent RFI (radio frequency interference).

EKR15.1 automatically adapts its control mode to suit the dynamics of the controlled object. For rapid temperature changes i. e. supply air control EKR15.1 will act as a PID controller. For slow temperature changes i.e. room control EKR15.1 will act as a PID* controller.

*PID- proportional-integral-derivative.

Night set-back

Potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts 10, 11) in the EKR15.1.

Technical data

Controlled load [kW]	15
Extra controlled load (recommended) * [kW]	12
Total controlled load [kW]	27
Max. controlled current [A]	25
Voltage [V]	3x230/3x400
Frequency [Hz]	50-60
Phases	3~
Dimensions (WxHxL) [mm]	270x145x130
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	50
Ambient humidity	90%RH max.

* Extra load should be connected via contactor to the relay output.

Controllers conform to requirements of standards EN 61010-1+A2: 2000, EN 50081-1: 1995, EN 55022: 2000 and carry the CE mark.

Title	Article No.
EKR 15.1P	106799

EKR15.1P is a proportional controller for multistep(up to 5 steps) electric heaters with automatic voltage adaptation. EKR15.1P controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.

EKR15.1P is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control.

EKR15.1P can control with triac output 15kW heater and has four relay outputs for 4 extra load steps control with contactors, on which can be connected load up to 225kW. Full load can be 240kW.

Control principle

Triac output of EKR15.1P has zero phase-angle detection to prevent RFI (radio frequency interference).

If triac output is ON more then 5 min controller will increase output by one step. Second step will be switch on after 2 min if previous is switched on for this time. All steps are switching in such order to increasing output. In case then output decreasing is needed, step will be switch off after 5min. Other steps will be switch off after 2 min to decrease output.

Extra load steps can be switched in binary or serial mode. Number of connected extra load steps can be selected with rotating switch. In binary mode switching steps can be 0-15, in serial mode 0-4.

Night set-back

Potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts 10, 11) in the EKR15.1P.

Technical data

Controlled load [kW]	15
Extra load control output	4x5A/230V
Max. triac controlled current [A]	25
Voltage [V]	3x230/3x400
Frequency [Hz]	50-60
Phases	3~
Dimensions (WxHxL) [mm]	105 x 260 x 120
Fuse [A]	2x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	50
Ambient humidity	90%RH max.

* Extra load should be connected via contactor to the relay output.

Controllers conform to requirements of standards EN 61010-1+A2: 2000, EN 50081-1: 1995, EN 55022: 2000 and carry the CE mark.

EKR 30 / EKR 30P

Controller of electrical heating



Title	Article No.
EKR 30	107747

EKR30 is a proportional controller for electric heaters with automatic voltage adaptation. EKR 30 controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand. EKR 30 is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control. EKR30 can control 30kW heater and has relay output for extra load control with contactor, on which can be connected load up to 12kW. Full load can be 42kW.

Title	Article No.
EKR 30P	107748

EHC-30-P is a proportional controller for multistep(up to 5 steps) electric heaters with automatic voltage adaptation. EHC-30-P controls the whole load On-Off. The ratio between On-time and Off-time is varied 0-100% to suit the prevailing heat demand.

EHC-30-P is designed only for electric heating control. The control principle makes it unsuitable for motor or lighting control. EHC-30-P can control with triac output 15kW heater and has four relay outputs for 4 extra load steps control with contactors, on which can be connected load up to 225kW. Full load can be 255kW.

ACCESSORIES

Control principle

EKR30 has zero phase-angle detection to prevent Radio Frequency Interference. EKR 30 automatically adapts its control mode to suit the dynamics of the controlled object. For rapid temperature changes i. e. supply air control EKR 30 will act as a PI controller. For slow temperature changes i.e. room control EKR 30 will act as a P controller.

Night set-back: potential-free closure will give a night set-back of 1-10°C. Settable with a potentiometer (Contacts Timer-GND) in the EKR 30.

Control principle

Control principle:

Triac output of EHC-30-P has zero phase-angle detection to prevent Radio Frequency Interference.

If triac output is ON more then 5 min controller will increase output by one step. Second step will be switch on after 2 min if previous is switched on for this time. All steps are switching in such order to increasing output. In case then output decreasing is needed, step will be switch off after 5min. Other steps will be switch off after 2 min to decrease output. Extra load steps can switching in binary or serial mode (switch 4). Number of connected extra load steps can be selected with micro switch 5, 6.

Night set-back: potential-free closure will give a night set-back of 0-10°C. Settable with a potentiometer (Contacts Timer-GND) in the EHC-30-P.

Technical data

Controlled load [kW]	30
Extra controlled load [kW] (recommended) *	12
Total controlled load [kW]	42
Max. controlled current [A]	45
Voltage [V]	3 x 230/3 x 400
Frequency [Hz]	50-60
Phases	3~
Dimensions (LxWxH) [mm]	240x260x175
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	120
Ambient humidity	90% RH max.

* Extra load should be connected via contactor to the relay output. Controllers conform to requirements of standards EN 61010-1+A2:2000, EN 50081-1:1995, EN 55022:2000 and carry the CE mark.

Technical data

Controlled load [kW]	30
Extra load control output	4 x 5A/230V
Max. controlled current [A]	45
Voltage [V]	3 x 230/3 x 400
Frequency [Hz]	50-60
Phases	3~
Dimensions (LxWxH) [mm]	240x260x175
Fuse [A]	2 x 0,315
Protection class	IP20
Ambient temperature without condensation [°C]	0-40
Heat dissipation [W]	120
Ambient humidity	90% RH max.

* Extra load should be connected via contactor to the relay output. Controllers conform to requirements of standards EN 61010-1+A2:2000, EN 50081-1:1995, EN 55022:2000 and carry the CE mark.

The company reserves the right to make changes of technical data without prior notice